

SOME SAN DIEGO COUNTY PLEISTOCENE NOTES.
By Frank Stephens.

The Pleistocene exposures in San Diego county are along the sea coast, the greater number being close to the beach of ocean or bay. Their elevation above the present sea level varies from at or below sea level to nearly one hundred feet above the sea. Taken as a whole the elevation after the strata were deposited was nearly uniform, though there are some local differences of a few feet. There are some differences between the strata on the ocean front and those on San Diego and Mission Bays and they are probably not contemporaneous, the ocean front probably are younger. Before the time when these Pleistocene deposits were laid down an elevation of the whole region had extended the dry land several miles westward. Then a period of depression occurred, continuing until the sea beach was a short distance further inland than the present sea beach. This was probably when the fossil shell deposits at San Diego and Mission Bays were laid down. Then a few feet more depression occurred. The land remained stationary a long time and the sea cut a terrace along the water front. This terrace is distinct along the west side of Point Loma and probably extended along the coast for many miles as traces of can be found in many places. The sea level at this time was nearly one hundred feet above the present sea level and the shore line was very different from the present shore line. There were no San Diego and Mission Bays. Point Loma was an island. There were small bays at the mouths of the rivers. The accompanying sketch map shows how the shore line would look if the land was now depressed one hundred feet. It is based on the one hundred foot contour line of the San Diego and La Jolla Quadrangles of the U. S. topographic surveys. As the contact between the Pleistocene strata of the terrace and the underlying rocks is distinct and varies but a very few feet ~~from~~ from the horizontal in many miles it is practically certain that the sketch map shows where the shore line was just before the last elevation. Later the land rose to its present position and the sea began cutting a new terrace. It has worn away much of the old terrace, in places even the whole of it. On Point Loma the remnant varies from a few yards to a quarter of mile in width. From Torrey Pines to Mission Bay it is all gone in places only a few fragments being left, that one on which Pacific Beach is built being the largest. Given time enough the sea will get these too. "The mills of the gods grind slowly, but they grind exceeding fine". These Pleistocene deposits should not be confused with the shells of edible species found at ancient Indian camp sites and villages ('kitchen-middens') found in many places along the coast. These shells are of few species, but often contain small shells and therefore may be misleading. These small shells are usually young individuals of the edible species.

Identification of the species was made by Mrs. Kate Stephens. She has examined all the shells collected at the various localities herein described, numbering several thousand specimens. Practically all the species found are now living in the ocean. Some are southern scarcely, or not now, found this far north. More are northern species. This shows a former variation in the ocean currents.

Localities Examined.

The numbers used are those of entries in the Geological Record of the San Diego Society of Natural History.

SDSNH# II8. International Boundary Monument #258 is on a mesa a few yards from its edge, at the Pacific Ocean. This mesa is a terrace about 75 feet in altitude at the beach and about 150 feet where it abuts against the hills eastward. The terrace is about half a mile in width. Northward it is bounded a quarter of a mile from the international boundary by the Tijuana River bottom. The sand beach in front of the terrace is a hundred yards or more in width. On it are some small sand dunes. The bank at the edge of the terrace is a steep, soil-covered slope carrying a considerable growth of brush. This soil hides the edge of the more or less consolidated sand and clay underlying the terrace and rock exposures are very few. 75 yards north of monument 258 a small ravine cuts through the talus and exposes a fossiliferous stratum about 40 feet below the edge of the terrace and about 30 feet above the sea. This stratum is about a foot thick and contains an abundance of fragments of large bivalves. These fragments are so thoroughly broken that very few can be recognized specifically. By sifting I obtained a number of univalves mostly small species. The material underlying the fossiliferous stratum appears to be a soft sandstone. That over it is sand and clay, poorly consolidated except a hard stratum of sandstone near the top of the slope. The species most abundant found here are - Acularia perpenguia, Alectriion fossata, Columbella carinata, Conus californicus, Crepidula adunca, Dentalium neohexagonum, Olivella poetica, Tellina meropsis, Turbinella sp..

SDSNH# II9. About a quarter of a mile from the ocean a ravine crosses the international boundary east of monument 258. It runs northward to the Tijuana River bottom. About 200 yards north of the boundary in the bank west side of the ravine a fossiliferous stratum is exposed. It is about a foot thick and is composed of material similar to that of #II8, and, like it, is exposed but a few feet in length. About 25 yards south of this exposure is another small exposure of this fossil bearing stratum. As the fossils appeared to be like those of #II9 I did not collect any of them.

From composition, situation and altitude I believe #II8 and #II9 are a part of the same stratum, and that this stratum underlies the terrace possibly as far back as the wave cut terrace extends, and that the overlying material was worn away from the hills partly by wave action and partly by erosion. After later elevation the sea wore away the edge of the terrace and built a sand beach in front of the bank.

The species most abundant are - Acularia perpenguia, Columbella carinata, Conus californicus, Crepidula adunca, Dentalium neohexagonum, Glycimeris septentrionalis, Kelliia laperousei, Oiostoma sp., Olivella pedroana, Tellina bodegaensis.

SDSNH# 54 Twenty sixth Street at San Diego Bay. This locality is marked on the San Diego Quadrangle as Indian Point. The fossil deposit is at the bay shore and extends a block each way from the foot of 26th street. The Santa Fe railroad is graded along the bank and exposes some of the deposit. The grade cuts through the point. The principal deposit of shells is on the outer side of the point. It extends from 15 or 30 feet above tide to an unknown distance under water. Shells of several species are abundant. They are in coarse sand, usually loose, cemented with lime in places. There is considerable "kitchen midden" material on the terrace at the top of the bank and some of the shells have been washed down on the face of the bank. The species most abundant are - Cardium substriatum, Chione undatella, Coccus sp., Crucibulum spinosum, Diplodonta sericata, Dosina ponderosa, Lacuna unifasciata, Macoma calcarata, Mactra californica.

SDSN# 55. Greely Street south of 32nd. Street. About two thirds of a mile from San Diego Bay in a bank south side of a ravine - old railroad grade in the ravine. Alt. about 40 feet. There is a sandstone stratum, cemented with lime, that contains many fragments of shells and a few whole ones, but they are soft and crumble in extracting. Overlying this stratum is soil that contains scattered shells that are better preserved. They probably were weathered out of a higher stratum. Soil and rubbish have been dumped over the bank and obscure its face. The commonest shells here are - Chione succinata, Ostrea lurida, Pecten circularis and Phacoides nuttalli.

When San Diego City ("New Town") was first settled fresh water used by the inhabitants was obtained from wells. One of these wells was in the lower end of Cabrillo Canon, in the southwestern corner of Balboa Park. According to the contours of the San Diego Quadrangle this is about the 100 foot contour. In digging the well fossil shells were found, which fact was reported to Mr. Henry Hemphill, a conchologist then living in San Diego. Mr. Hemphill made a collection of over a hundred species of shells from this well. These were sent to Dr. Dall for identification. Dr. Dall reported on them in Proc. Sal. Academy of Sciences, V 1874, and in Proc. U. S. National Museum Vol I 1878, pp 10 - 16 and pp 29 - 30. The shells were obtained at a depth of 90 to 160 feet from the surface, therefore at and below sea level. This well was about a mile from the bay. Shells were found in other wells also, but not in as much abundance as in this one. No report of the relative abundance was made, but Dr. Dall makes some comments on their distribution. "Ten species are extinct and ninety seven are still found living. Of those recent or still living forms twenty are found in the California fauna and northward at the present time. Eighteen more are found in the California fauna and southward, while forty four are strictly Californian. Besides there are eight species belonging to the Oregonian or Arctic fauna and no longer found living in the Californian region. Seven more are found on the west coast of Mexico, the Gulf of California, or western Middle America, and so far as we know, no longer in the Californian region."

SDSN# 56. Spanish Bight. A bridge across the Bight is the principal connection between Coronado Beach and the aviation grounds on North Island. A cliff 20 to 25 feet in height along the east side of North Island borders the Bight, which at high tides reaches the foot of the cliff. A hundred yards south of the west end of the bridge a coquina deposit composed principally of Donax commences. In the upper part of the deposit the shells are rather firmly cemented together, but lower they are less cemented, often being loose in sand. The Donax deposit is a dozen feet or more in thickness and is overlaid with a few feet of soil. It extends about a hundred yards southward where it rather abruptly becomes considerably less abundant in Donax and other species come in, rather sparingly at first but more abundantly further on and occasionally in bunches. These fossils occur in gray sand. The face of the cliff is usually covered with a few inches to two or three feet of soil which has been washed from above or dumped from the aviation grounds. Much rubbish has also been thrown over the cliff, in places covering the best of the collecting ground. This Spanish Bight locality has yielded the greatest number of species of any collecting locality along this part of the coast. Some of the species most abundant are - Alectriion fossata, Aligena cerritensis, Columbella guapata, Dendraste excentrica, Dentalium neohexagonum, Crepidula atunca, Ryptomya californica, Donax laevigata, Olivella biplicata, Olivella oetica, Pecten latiauratus, Tellina buttoni, Terebra pedroanum, Tivella tulgorum.

SDSN# 57. At Rosencrans Street southwest from Dumas Street for two blocks street grading has exposed a deposit consisting principally of fragments of Ostrea lurida. The Ostrea fragments are a compact mass several feet in thickness. There are a few other species in small numbers. The altitude above the bay is 30 or 40 feet.

SDSN# 58 - 59 - 60 - 61 - 62 - 63 - I21 - I22 - I23 - I24 - I25 - I26 - I27 - I28 - Along the west coast of Point Loma, within a distance of four miles are a number of paleontological collecting localities. As they are all on the same Pleistocene strata I will describe them as a group. The only difference among them is the relative abundance of the species, caused by the difference of the ~~XXXXXX~~ material of the fore shore from which they were originally transported by wave and current action; whether it was rock bottom, mud or sand. The preponderance of rock-dwelling species, such as limpets, chitons and mussels shows that in Pleistocene time the fore-shore was principally rocky, as it is now.

Along the western side of Point Loma there is practically no beach, the waves at mid- and high-tides beat against a rock cliff. At low tide a narrow rock or boulder beach may be exposed in places. The cliff is so near perpendicular that it can be scaled in ^{but} few places. The line of contact between the Pleistocene and the underlying older rocks can easily be distinguished all along the cliffs. The contact line is horizontal, varying so little from a true level for many miles that it requires close inspection, or the use of an instrument, to detect any variation. This is not the case with the underlying strata. It is seldom that they run horizontal any distance. The older rocks dip at various angles and in various directions, showing that they had been distorted by earth movements before the upper part had been cut away in Pleistocene time. A remarkable fact is that no such local disturbances have taken place since the Pleistocene strata have been deposited, as the variation in level of the Pleistocene strata is but a very few feet in the many miles along the coast. One exception to this condition must be noted. About a third of a mile from the southern extremity of Point Loma a fault occurred with a downthrow of about twenty feet on the south side. This fault occurred after the Pleistocene strata were deposited, as the drop in the contact line shows.

It may have occurred at the time of the last elevation of the land.

While the Pleistocene strata were being deposited the surf was at work wearing away the base of the bordering hills and forming a terrace. After the last uplift occurred the waves began on a new terrace and have already worn away much of the Pleistocene terrace which now varies in width along the west coast of Point Loma from a few yards to a quarter of a mile.

The commonest Pliocene species found along the west coast of Point Loma

The commonest Pleistocene species found along the west side of Point Loma are - Acmaea insissa, Acmaea limitula, Acmaea mitra, Acmaea pelta, Acmaea scabra, Aletes squamigerus, Cardita subquadrata, Chione undatella, Chlorostoma lunulata aperta, Conus californicus, Crepidula aculeata, Crepidula adunca, Cunninghamia lamellosa, Fissurella volcano, Leptothria carpenteri, Littorina scutellata, Lottia gigantea, Micaraphe scutellata, Mytilus californicus, Paphia staminea, Phacoites californicus, Pseudochama exogyra, Septifer bifurcatus.

SDSN# 64. At the northeast corner of Mission Bay is a cut made by the Santa fe railroad. In the northern end of the cut is a deposit of Pleistocene shells. This extends below ditches on the sides of the track an unknown distance and up the bank eight or ten feet. In the cliff between the railroad and the bay is an exposure of Pliocene age, and at the water's edge is a stratum of Eocene age. The altitude of the railroad cut is 25 or 30 feet. Some of the species found here are - Cerithidea californica, Chione gnidia, Chione succinata, Macoma calcaria, Paphia staminea, Phacoides californicus, Phacoides nuttalli, Purpura haemostoma, Tagelus californicus, Felania sericata, Tellina meropsis.

SDSN# 65. Crown Point was formerly known as Bay Point. It projects into Mission Bay from the north. Along the west side of its southern extremity is a deposit of Pleistocene age. This is a cemented mass composed principally of Donax laevigata, with a few Amiantes callosa, Chione succincta, Macoma secta, Paphia staminea and Tivella stultorum scattered through the mass. In the lower part about high tide line Dendraster excentricum is common. The shell bearing stratum extends from the water ten to fifteen feet up the bank.

SDSN# 66. Along the ocean front at Pacific Beach is a cliff 20 to 50 feet in height. Through about half a mile of the southern part of this cliff fossils are more or less abundant. The upper 5 to 15 feet of this cliff is Pleistocene, and the lower part is Pliocene. In the Pliocene a skull, ribs and vertebrae of some species of whalebone whale have been found. Pleistocene shells have been washed down over the Pliocene and are liable to be confused with Pliocene species. The contact between the Pleistocene and Pliocene is practically horizontal, but the Pliocene strata are non-conformable, the dip being southward. A careful collection of fossil shells from above the contact includes the following common species - Acanthina paucilirata, Acmaea insessa, Alectron fossata, Aletes squamigerus, Calostoma canaliculatum, Columbella carinata, Columbella guasapata, Comus californicus, Crepidula aiunca, Crepidula onyx, Cryptomya diadema sp., Donax laevigata, Fissurella volcano, Littorina scutellata, Olivella biplicata, Olivella pedroana, Paphia staminea, Polinices recluziana, Tivella stultorum.

SDSN# 67. At the beach between La Jolla and La Jolla Hermosa are weathered out shells lying on the surface or a few inches in the soil, 15 to 35 feet above tide. I found no stratum, probably it is all weathered away. Conditions are much the same for some distance along the beach but I found no shells elsewhere. In the cliff a little further south the contact between the Pleistocene and the older rocks is plain, but I found no fossils there. Species found here are - Acmaea limitula, Barnacles, Donax gouldi, Isochiton sp., Lottia gigantea, Mytilus californicus, Pseudochama exogyra, Septifer bifurcata.

SDSN# 68. The Pleistocene terrace that once must have extended along the ocean side of the Torrey Pines ridge has been almost completely obliterated by the sea. At least one remnant is left. This is at the Stairway Canon, a mile or more south of the northern extremity of the ridge. This remnant extends a quarter of a mile or so southward from the stairway and nearly as far northward, but the northward part is much narrower merely a shelf toward the end with but a thin fossiliferous stratum left over the contact. Evidently in Pleistocene time there was a cove or little valley at the lower end of the Stairway Canon which the surf widened and cut back beyond the elsewhere nearly straight face of the cliff and was therefore somewhat protected. In this cove and probably in that part of the terrace that has vanished, clay, sand and shells were deposited, forming the Pleistocene strata. The contact between the lower part of the Pleistocene strata and the Eocene below it is about sixty feet

feet above sea level. The Eocene strata are not fossil bearing at that height, but are richly fossiliferous at and a little above sea level, and Eocene fossils may be found in places near the top of the cliffs. 200 to 350 feet above sea level, At least 25 species of fossil shells occur in the Pleistocene strata. The most common species are - *Cummingea lamellosa*, *Donax gouldi*, *Donax laevigata*, *Isochiton* sp., *Mytilus californicus*, *Paphia staminea*, *Pseudochama exogyra*, *Tivella stultorum*, *Saxidomus nuttalli*.

SDSN# 69. North side of San Dieguito valley, about two miles by road from Del Mar on the way to Rancho Santa Fe. About a mile from the sea. In the hillside north of the road is a Pleistocene deposit. In its eastern part the shells are weathered out and scattered over the hillside, with no stratum discernable. In the western part, in a small gulch is a stratum of lime cemented sandstone containing fossil shells, and near the gulch were what appeared to be blocks of the same stratum in the soil. The fossiliferous stratum is about 60 feet above sea level. Brush and soil obscure the situation, and no contact with older rock was found. A few hundred yards further east, at the roadside, is a stratum containing Eocene fossils. The most common species of the Pleistocene shells found were - *Aletes squamigerus*, *Chione succincta*, *Chione undatella*, *Diplodonta sericata*, *Diplodonta subquadrata*, *Ostrea lurida*, *Phacoides nuttalli*, *Pecten aequisulcata*, *Pinna* sp., *Tagelus californicus*.

Pleistocene

No.

- 54 Foot of 26th St., Bay shore.
55 Sandiego near Greeley and 32nd Streets
55a East of 32nd St. 1½ blocks north of National Avenue
56 Spanish Bight.
57 Loma Portal, Rosencrans St. between Browning and Center streets
58 ¼ mile N.W. of the new lighthouse on Point Loma. At the beach.
58a ½ mile NW of the new lighthouse, north of the faults.
59 Point Loma, about two miles NW of the lighthouse.
60 About 2 ¼ miles NW of the lighthouse.
61 From the second (or third?) gulch south of the north line of the military reservation on Point Loma.
61a On a point about 15 feet above the strata containing #61.
62 Point Loma, about 1½ miles south of Ocean Beach. On the property of the Theosophists, 200 yards south of the S.W. corner of Sunset Cliffs
63 Ocean front at Santa Cruz Ave., Ocean Beach.
64 Northeast corner of Mission Bay. on Santa Fe R.R. right of way.
65 Crown Point (Bay Point on maps.) Mission Bay.
66 ~~Mission Beach~~ Pacific Beach. ocean front, from above contact with Pliocene
67 San Diego Valley. In bank on north side of the road to Santa Fe
Rancho, 1 ¾ miles from Del Mar 1 mile from the ocean
68 Torrey Pines, at mouth of the "stairway" canon.
69 South of La Jolla and a little north of La Jolla Hermosa
70 N.E. corner of Point Loma, near end of dyke.
71 Head of Batiquitos Lagoon, about two miles from the sea.
72 North side of the head of Batiquitos Lagoon, e
118 100 yards north of boundary monument 258. at sea beach.
119 400 yards north east of monument 258, west side of gulch.
120 ~~Also~~ South of 119. 75 yards north of the boundary fence.
121 ¾ mile north of the new lighthouse, Point Loma
122 ¼ mile south of the "coal mine", Point Loma.
123 Point Loma, "coal mine".
124 ¾ mile north of the "coal mine". At foot of hill, upper edge of terrace.
125 ~~Also~~ ¾ mile NW of Point Loma lighthouse, at mouth of same ravine as 124
126 ~~Also~~ 2 miles NW of Point Loma lighthouse

Pleistocene

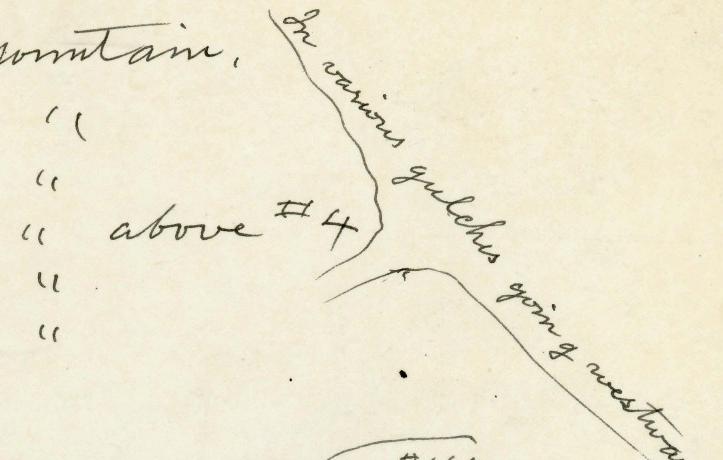
Locality number

- 127 Point Soma, near sea beach, west side $1\frac{3}{4}$ m. n. of lighthouse
128 Point Soma, $2\frac{1}{4}$ m. n. of lighthouse
129 At foot of extreme north end of Torrey Pines ridge, at beach. Probably
a slide
187 1 mile south of boundary monument 258, at sea beach
188 South side Tijuana River, 500 yards east of the sea beach, 250 yards
north of the boundary fence
190 1 mile northwest of Newport Beach
199 In Lower California, $2\frac{1}{2}$ miles south of Monument 258
?362 a " " at the shore of ~~the~~ the Gulf of California; 2 m. n. of
San Felipe
343 About 4½ miles north of Rosarita, Lower California and perhaps
a dozen miles south of boundary monument 258.
Sam Gaidris, Cal.

Pliocene

No
1a South end of Solidad Mountain.

- 3a " " "
4 " " "
5 " " "
7 " " "
9 " " "



10. East of Chula Vista.

- 12 San Diego, below Kensington Park car line bridge, West side of road
see #60
29 Balboa Park, south of the west end of Cabrillo Bridge see 189.
45 About six miles east of Carrizo Station, from a mound north side
of the road. This may be Blakes type locality. Imperial County = 143a
47, About 5 miles west of south of the old Carrizo Station, on the north
slope of a ridge running west from Coyote Mountain, San Diego County
47a Below #47 and 50.

50 From a stratum overlying #47.

- (54a) In clay hills 5 m. S.E. from Carrizo Station Imperial County
51 ³ Miles east of the old Carrizo Station and one mile south of
the road, Imperial County
66a, Pacific Beach, From below the contact with the Pleistocene
see #66, Pleistocene

141. Pacific Beach,

- 142 About four miles SSE from Carrizo Creek Station, in the wash that
heads in the gap in the ridge west of Coyote Mountain Imperial Co
142 a Half a mile up the wash from #142,
143 7 miles east of the old Carrizo Station, on the summit of the
hill where the road comes up from Carrizo Creek.
143 a Same as #45.

145 Barroth Canon in Black Mountain ^{5m} north of Carrizo Creek, Imperial
154 San Diego, Ruyard Way, ⁶⁰

~~155~~ Sandrock grade below the Adams St bridge,

158 "Fossil Caves", Bonita-Chula Vista.

160 San Diego below Kensington Park bridge see #12.

167 San Diego, 6th St. grade, below the Mercy Hospital

168 " " Balboa Park, from the side of the old graded road west of
the old camp of the marines

Pliocene.

No

169. West of Mt. Hope Cemetery, along the lower entrance, East of Imperial Ave,
170. Near the golf course in Switzer Canon, Balboa Park
172. San Diego southeast of Reynard Way.
173. San Diego. Reynard Way, at the old brickyard site
175. Barrett Canon, 7 miles from Carrizo Creek, Imperial County
176. $\frac{1}{2}$ mile south of the upper end of Split Mountain Canon, In Imperial County probably, but near the San Diego County line,
177. San Diego, near the Adams St. car barns, (1 block n.e.)
178. San Diego, near Fir and Boundary Streets (Gleno).
184. 4 miles east of the old Carrizo Station and $\frac{1}{2}$ miles south of the Carrizo wash
189. San Diego, Balboa Park, 400 yards south of the west end of Cabrillo Bridge, Same as no 29
346. Yuhu Buttes, Imperial County, 5 miles from Coyote Well,
272. about $\frac{1}{2}$ mile east of boundary monument 258 and 100 feet north of the boundary fence,
273. In next gulch one of 272
- 274.
275. South end of Soledad Mountain
277. San Diego, Balboa Park, southwest of the New Mexico building
Perhaps kitchen middens
278. A mile or more west of Encanto in a cut on the north side of Market St. 100 yards east of Euclid Avenue
- 341a. San Diego, Balboa Park, about $\frac{1}{4}$ mile south of the organ
342. San Diego, in a cliff graded for a private roadway at the eastern end of Paradise Valley.
344. Alverson Canon, Coyote Mts., Imperial County, near head of canon
345. " " " " $\frac{1}{2}$ mile above mouth of canon
346. Yuhu Buttes, Imperial County
347. ^b Alverson Canon
351. Coyote Mt, Imperial Co. 1 mile east of mouth of Alverson Canon
353. San Diego, Uras and Columbia Streets,
354. Barrett Canon, Imperial County, 4 miles above Carrizo Creek
- (355) India & Uras Streets San Diego,

Pliocene

No

- 358 San Diego, Balboa Park, Cabrillo Canon, $\frac{1}{4}$ mile above the bridge
360 Yerba Buena, Imperial County
361 Old Mission, San Diego.

364

356-386-381 2 miles

- 429, about $\frac{1}{2}$ mile east of the sea beach and 250 yards north of
the U.S.-Mexico boundary.
430 In next gulch N.E. from 429

Miocene

No

191 Laguna Beach, Orange County

192 " "

302 Santa Ana Mts, Santiago Canon, Orange County

303 " " " " " "

304 Laguna Beach, Orange County

305 " " " "

449 Dry Canon just north of the head of Topanga Canon, Los Angeles County. Turritella ocoyana.

Eocene

Eocene

no

- 171 East slope of Soledad Mt. at Rose Canon
174 San Clemente Canon, south side $\frac{3}{4}$ mile above Rose Canon
179 North end of Point Soma ridge, 1m from Soma Portal,
180 From a boulder, lower part of gulch, west end Mission Cliff Gardens
181 North side of Soledad Valley, 1m w of Sorrento
182, Torrey Pines cliff at ocean
183 " " "
185 San Clemente Canon near city boundary
186 " " " Rose Canon
194 Tecolote Canon, west side
195 " " east side
196 " " east fork
197 " " west side, Moreno grade
198 " " " "

272

276

- 352 Old Town, (Jamie Cooper)
355 India & Upas. San Diego.
356 San Clemente Canon, south side, about opposite 166
357 " " "
399, "Salt Creek," (Grant).

Cretaceous

- " 73 South shore of Todos Santos Bay, Lower California
152. Agua Hedionda Rancho, Canon de las Enemias
155 " " "
193 Point Loma, near lighthouse
306 Santa Ana Mts., Silverado Canon,
307 " " "
308 " " " Williams Canon
341 " " " Santiago-Aliso divide
363 Dry Lake, Nevada